

Notice of Allowability

Application No.

10/506,542

Examiner

Omar Rojas

Applicant(s)

ROMAGNOLI ET AL.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the telephone interview conducted on June 14, 2006.
2. ☒ The allowed claim(s) is/are 10-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review.(PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20060607.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☒ Other JP 2001188139 A.


John D. Lee
Primary Examiner

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Longo on June 14, 2006.

The application has been amended as follows:

IN THE CLAIMS:

10. (Currently Amended) A device for varying the direction of an optical beam, comprising:
- a first waveguide directed along a first direction;
 - a second waveguide directed along a second direction different from the first direction; and
 - a bending region interposed between the first and the second waveguide, said bending region comprising:
 - a photonic crystal having a regular periodicity and having at least a first and a second crystal axes substantially aligned with said first and second directions, respectively; and
 - a reflecting surface delimiting said photonic crystal and so positioned and oriented as to have the normal to said reflecting surface bisecting the first and second crystal axes and as to reflect an optical beam coming from the first waveguide toward the second waveguide,

wherein said photonic crystal is arranged so as to guide the optical beam coming from the first waveguide to the reflecting surface and to guide the reflected optical beam to the second waveguide.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 2001-188139 to Minolta Co Ltd discloses a photonic crystal 9 positioned between 2 or more waveguides (4, 5, 6). The photonic crystal has a delimiting reflecting surface 9a. Publication No. US 2003/0123827 A1 to Salerno et al. discloses photonic crystal mirrors 1882 positioned between crossing waveguides (Fig. 54A). Patent No. 6,064,506 to Koops discloses an optical switch having waveguides and photonic crystals with reflective properties. Patent No. 6,064,506 to Koops discloses an optical switch using waveguides coupled with photonic crystals having reflective properties. Patent No. 6,760,513 B1 to Heitmann et al. discloses an optical system using waveguides coupled with photonic crystals having reflective properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

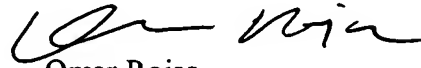
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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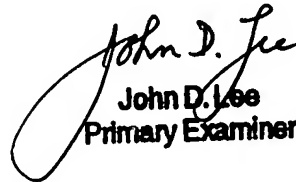
system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or

June 14, 2006



John D. Lee
Primary Examiner